

5 DEC 1962

O/Dir Routing

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REMARKS:

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BYE-4635-62
 3 December 1962
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MEMORANDUM FOR: Director, National Reconnaissance Office

THROUGH: Deputy Director for Research, CIA

SUBJECT: Proposed Corona Systems Performance Evaluation, Film Analysis Report

1. Engineers and scientists from Lockheed Missile and Space Company (LMSC), prime contractors for the system, and ITEK Corporation, camera designers and manufacturers, currently visit the National Photographic Interpretation Center (NPIC) after each mission to review the resulting photography and together with NPIC technical personnel conduct a critique in the form of a system performance analysis. This critique must often be performed on a duplicate positive in order to effect adjustments or correct malfunctions in time for the next mission, since duplication requirements delay receipt of the original negatives at NPIC until approximately three to four weeks after recovery. The original negatives are reviewed during subsequent visits both to verify preliminary critiques and for more refined analysis. As a corollary to this system performance analysis, NPIC currently conducts a detailed film evaluation, the results of which are published in a Photographic Evaluation Report for each mission (sample copy, attachment A). This report includes an evaluation of the photography, performance information on the five cameras, vehicle attitude, film density values, and other pertinent technical information. Normally NPIC conducts a preliminary evaluation of the photography prior to the arrival of LMSC and ITEK personnel and upon their arrival, they are given a short briefing on the mission results, including both good and bad points.

2. During the time the contract personnel are at NPIC, specific problems within given areas of responsibility are discussed with each group; i.e., problems pertaining to camera operation, vehicle performance, film processing, etc. During their visit, they analyze these problems, draw specific conclusions and make recommendations for improvement. Some of these recommendations are long range, but many are directed for incorporation into the next mission. For this reason the analysis must be completed rapidly, accurately, and the findings reported as soon as possible. to whom?

3. The current NPIC Photographic Evaluation Report, based on the analysis of the original negatives, as now prepared does not include recommendations for equipment changes, suggestions for corrective measures to overcome malfunctions, etc. Although NPIC technical personnel discuss these items in some detail with the contract engineers and OSA/DD/R personnel, it is felt that it is not within NPIC's area of responsibility to include this information in the present type of report.

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4. It is proposed that NPIC now revise the format of its present Photographic Evaluation Report and make it a Systems Performance Evaluation--Film Analysis Report, rearranging the presentation of information and including a new item; e.g., a statement prepared by the contractors. This statement would, for example, outline briefly the proposed action by the responsible contractor to correct such defects as a malfunction in the camera shutter, light leaks, new phenomena, comment on the success of previously recommended actions, etc. The report, however, would continue to be an evaluation of the current input; in addition it would include proposed corrective procedures, new procedures, etc., as stated by the responsible contractor.

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5. The final analysis and evaluation cannot be completed until the negatives are at NPIC. However in order not to delay early engineering analysis of the mission, it is suggested that NPIC notify the contractors of the arrival of the duplicate positives at NPIC so they can come in and examine the duplicate positives. It is recognized that a complete analysis cannot be accomplished using these duplicate positives, but certain types of analysis can be undertaken. When the schedule is such that new launchings follow shortly after the recovery of a completed mission, it is necessary that a preliminary study be undertaken immediately, and within this time schedule the duplicate positives must be used. Under these conditions a preliminary report can be issued to be superseded by the final report when the original negatives have been delivered to NPIC and the complete analysis-evaluation accomplished.

6. As one method of accomplishing this, the following procedure is proposed:

a. That NPIC notify AD/OSA, LMSC, ITEK and Eastman Kodak (EK) upon the arrival of the duplicate positives at NPIC.

b. That upon the receipt of the duplicate positives at NPIC, NPIC technical personnel conduct a preliminary review to ascertain or verify any major problem area and consider overall quality.

c. If the preliminary review of the duplicate positives indicate a need for immediate analysis, that a meeting time be established for LMSC, ITEK and EK personnel to meet at NPIC and that AD/OSA be so advised.

d. That immediately following this meeting a brief preliminary report be prepared by NPIC (distribution by cable or memorandum).

e. If the preliminary review does not reveal a need for an immediate analysis from the duplicate positives, that the analysis by the combined technical team be performed from the original negatives when they arrive at NPIC.

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f. That areas of responsibility for reporting be established for each major division of the resulting report. (See suggested report form, attachment B.)

g. That NPIC function as coordinator and publish the resulting report.

h. That the report include the names of all the participating personnel and identification of their parts of the report.

i. That the report include the success or failure of recommended changes noted in previous reports, new problems, conclusions and recommendations.


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we proposing
an action
report?*

j. That the report be completed within three weeks of arrival of the original negatives at NPIC.

k. That the final report be distributed to all participating members of SETD meetings.

7. If the above proposal is accepted, it is recommended that this method of reporting be tried for the next three missions and, if satisfactory, it then be adopted as standard procedure. NPIC is prepared to accept its part in the reporting responsibilities as coordinator in publishing the report.

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ARTHUR C. LUNDAHL

Director

National Photographic Interpretation Center

Attachments:

A - BYE-3819-62 (Photographic Evaluation Report)

B - Suggested Report Format

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BYE-4635-62

Distribution:

- Cys. 1, 2, 3 - DD/R/CIA (cys 1 & 2 for Dir/NRO)
- 4 - DD/I/CIA
- 5 - DD/OSA/CIA
- 6 - OD/OSA/CIA
- 7, 8 - OD/NPIC
- 9 - Asst. for Plans and Dev., NPIC
- 10, 11, 12 - TID/NPIC

NPIC:TID

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ATTACHMENT B TO BYE-4635-62

SUGGESTED REPORT FORMAT

Title: Systems Performance Evaluation--Film Analysis Report

Objective of the Report: To analyze, evaluate and report the results of the most recent Corona mission for both operational performance and photographic interpretation fulfillment.

Participants: Organization and individual

Mission number, date, etc.:

<u>Major Report Divisions</u>	<u>Responsible Reporting Activities</u>
I Summary	NPIC
II Vehicle	LMSC, NPIC
III Cameras	ITEK, LMSC, NPIC
IV Film	EK, NPIC
V PI Evaluation	NPIC

I Summary of the Mission (NPIC)

A brief summary of the mission from both an operations and photo interpretation viewpoint, commenting on both the good points and the bad points as noted in Sections II through V below.

II Vehicle (LMSC, NPIC)

1. Performance according to plan
2. Vehicle attitude
3. Problem areas
4. Other
5. Contractors' comments and recommendations. To include the results of previously incorporated corrective actions as well as new corrective actions considered necessary.

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III Cameras (ITEK, LMSC, NPIC)

A. Pan No. 1 (Forward)

1. Apparent resolution
2. Focus
3. Exposure
4. Shutter
5. Binary data block
6. Timing pulses (pips)
7. Camera number
8. Fiducials
9. IMC
10. Light leaks
11. Film metering
12. Film tracking
13. Film tearing
14. Pressure streaks
15. Strange phenomena
16. Other
17. Contractors' comments and recommendations. To include the results of previously incorporated corrective actions as well as new corrective actions considered necessary.

B. Pan No. 2 (Aft)

Same as above

C. Framing Camera

1. Apparent resolution
2. Focus
3. Exposure

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4. Shutter
5. Reseau grid
6. Light leaks
7. Film metering
8. Film tracking
9. Film tearing
10. Strange phenomena
11. Other

12. Contractors' comments and recommendations. To include the results of previously incorporated corrective actions as well as new corrective actions considered necessary.

D. Horizon Cameras, Pan No. 1 (Forward)

1. Starboard
 - a. Apparent resolution
 - b. Focus
 - c. Exposure
 - d. Shutter
 - e. Fiducials
 - f. Light leaks
 - g. Film metering

h. Contractors' comments and recommendations. To include the results of previously incorporated corrective actions as well as new corrective actions considered necessary.

2. Port

Same as above

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E. Horizon Cameras, Pan No. 2 (Aft)

1. Starboard (same as above)
2. Port (same as above)

F. Stellar Camera (same as above)

IV Film (Original Negative) (EK, NPIC)

A. Pan No. 1 (Forward)

1. Processing data
2. Processing problems
3. Apparent granularity
4. Contrast
5. Crimping
6. Pinholes
7. Abrasions
8. Scratches
9. Tearing
10. Water marks
11. Processing streaks
12. Blistering
13. Density readings
14. Other

15. Contractors' comments and recommendations. To include the results of previously incorporated corrective actions as well as new corrective actions considered necessary.

B. Pan No. 2 (Aft)

Same as above

C. Framing Camera

Same as above

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D. Stellar Camera

Same as above

V Evaluation of Material from PI Viewpoint (NPIC)

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